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ABSTRACT

Psychophysiologic research indicates that muscle-contraction headache often is not characterized by excessive or unusual muscular activity, and muscular changes seldom accompany headache improvement resulting from treatment. Multidimensional models have been proposed, which emphasize the interdependence of physiological and psychological systems in the ontology of recurrent headache. In the present study, intervention targeted behavior patterns associated with the onset, maintenance and process of coping with headache. Patients were instructed to identify headache-related cognitions and pain behaviors, then encouraged to employ alternative coping behaviors in response to cognitions that previously cued pain behaviors. Headache activity, pain behaviors and negative mood states were analyzed through time-series analysis. The results indicated a decline in headache index for 7 of the 9 patients. A decline was also observed in performance of pain-related behaviors and dysphoric mood states. No significant changes were found in other measures of psychological symptoms or the frequency of stressful environmental events. (LLL)

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CHANGES IN ILLNESS-RELATED BEHAVIOR AND DYSPHORIA ACCOMPANYING BEHAVIORAL TREATMENT OF RECURRENT HEADACHE

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Paper presented at the Society of Behavioral Medicine
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Abstract

Psychophysiologic research indicates that muscle-contraction headache often is *not* characterized by excessive or unusual muscular activity, and muscular changes seldom accompany headache improvement resulting from treatment. Multidimensional models have been proposed, which emphasize the interdependence of physiological and psychological systems in the ontology of recurrent headache. Such models are supported by empirical evidence linking headache with specific cognitive, affective, behavioral, and environmental events. Thus, it appears worthwhile to examine multiple response dimensions to clarify the course and mechanism of symptom change.

In the present study, intervention targeted behavior patterns associated with the onset, maintenance, and process of coping with headache. Patients were instructed to identify headache-related cognitions and pain behaviors, then encouraged to employ alternative coping behaviors in response to cognitions that previously cued pain behaviors. Treatment contrasts with other behavioral therapies for headache which typically focus upon modifying physiological responses (e.g., biofeedback, relaxation training) or altering cognitions (e.g., cognitive-behavior therapy, stress-management).

Intervention was evaluated in an intensive experimental design, using multiple baselines across subjects. Headache activity, pain behaviors, and negative mood states were analyzed through time-series analysis. Nine adult headache patients with recurrent tension headaches recorded daily headache activity, mood, and pain behaviors (help-seeking, avoidance of activities, and complaining). Time-series analysis revealed a statistically reliable ($p < .05$) and clinically meaningful decline in headache index for 7 of the 9 patients (M headache improvement = 39.8%). Additionally, a marked decline was observed in performance of pain-related behaviors ($p < .01$) and a modest but stable reduction in dysphoric mood states ($p < .05$). No significant changes were found in other measures of psychological symptoms or the frequency of stressful environmental events. Headache changes were maintained at a one month follow-up assessment. Results suggest that this behaviorally-based treatment is effective for some headache sufferers. Further, the evidence indicates a different therapeutic mechanism than stress-management training and behavioral treatments aimed directly at reducing muscular tension.

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Psychophysiologic research indicates that muscle-contraction headache often is *not* characterized by excessive or unusual muscular activity, and muscular changes seldom accompany headache improvement resulting from treatment. Multidimensional models have been proposed, which emphasize the interdependence of physiological and psychological systems in the ontology of recurrent headache. Such models are supported by empirical evidence linking headache with specific cognitive, affective, behavioral, and environmental events. Thus, it appears worthwhile to examine multiple response dimensions associated with headache to clarify the course and mechanism of symptom change, as well as to evaluate the effectiveness of intervention.

The multidimensional paradigm of headache provided the impetus for our adaptation of Contextual Therapy [1] to the treatment of headache. This adaptation targets behavior patterns associated with the onset, maintenance, and process of coping with headache. Patients were instructed to identify headache-related cognitions and pain behaviors, then encouraged to employ alternative coping behaviors in response to cognitions that previously cued pain behaviors. Contextual Therapy contrasts with other behavioral therapies for headache which typically focus upon modifying physiological responses (e.g., biofeedback, relaxation training) or altering cognitions (e.g., cognitive-behavior therapy, stress-management).

Method

Prospective patients participated in a structured diagnostic interview and completed a battery of questionnaires. Nine adult headache patients (78% female) with chronic episodic muscle-contraction headaches met inclusion criteria according to the Ad Hoc Committee [2] diagnostic criteria for muscle-contraction headache, and were invited to participate in the study. Patients average age was 36 years, and mean duration headache history was 10.5 years.

Intervention was evaluated in an intensive experimental design, using multiple baselines across subjects. Throughout baseline and treatment, participants recorded daily headache activity, mood, and pain behaviors (help-seeking, avoidance of activities, and complaining). Following either two, four, or six weeks of baseline assessment, patients began the treatment protocol. Stability of baseline headache activity determined when participants were assigned to begin treatment. Treatment was administered in six weekly individual therapy sessions and patients completed behavioral homework assignments each week.

Headache activity, pain-related behaviors, and dysphoric mood states were assessed daily and analyzed through time-series analysis (*C* statistic). The pretreatment questionnaire battery was repeated post-treatment and at the one-month follow-up examination. Treatment was evaluated for clinical as well as statistical significance.

Results and Discussion

Time-series analysis revealed a statistically reliable ($p < .05$) and clinically meaningful decline (moderate to much improved) in headache index for 7 of the 9 patients; mean headache change for the group was 39.8% improvement. Headache activity averaged across subjects in the three baseline conditions are represented graphically in Figure 1. Additionally, a marked decline was observed in performance of pain-related behaviors ($p < .01$; Figure 2) and a modest but stable reduction in dysphoric mood states ($p < .05$; Figure 3). No significant changes were found in other measures of psychological symptoms or the frequency of stressful environmental events. Headache changes were maintained through the one-month follow-up assessment.

These data suggest that this behaviorally-based treatment is effective for some headache sufferers. Treatment gains were not accounted for by changes in the frequency of stressful environmental events or headache-related beliefs or cognitions. Thus, the evidence indicates a different therapeutic mechanism than stress-management training and behavioral treatments aimed directly at reducing muscular tension.

References

1. Hayes, SC. (1987). A contextual approach to therapeutic change. In Jacobson N.S. (Ed.) *Psychotherapists in clinical practice: Cognitive and behavioral perspectives*. Guilford: New York 327-387.
2. Ad Hoc Committee on Classification of Headache. (1962). Classification of headache. *Journal of the American Medical Association*, 179, 717-718.

Figure 1

Headache Index

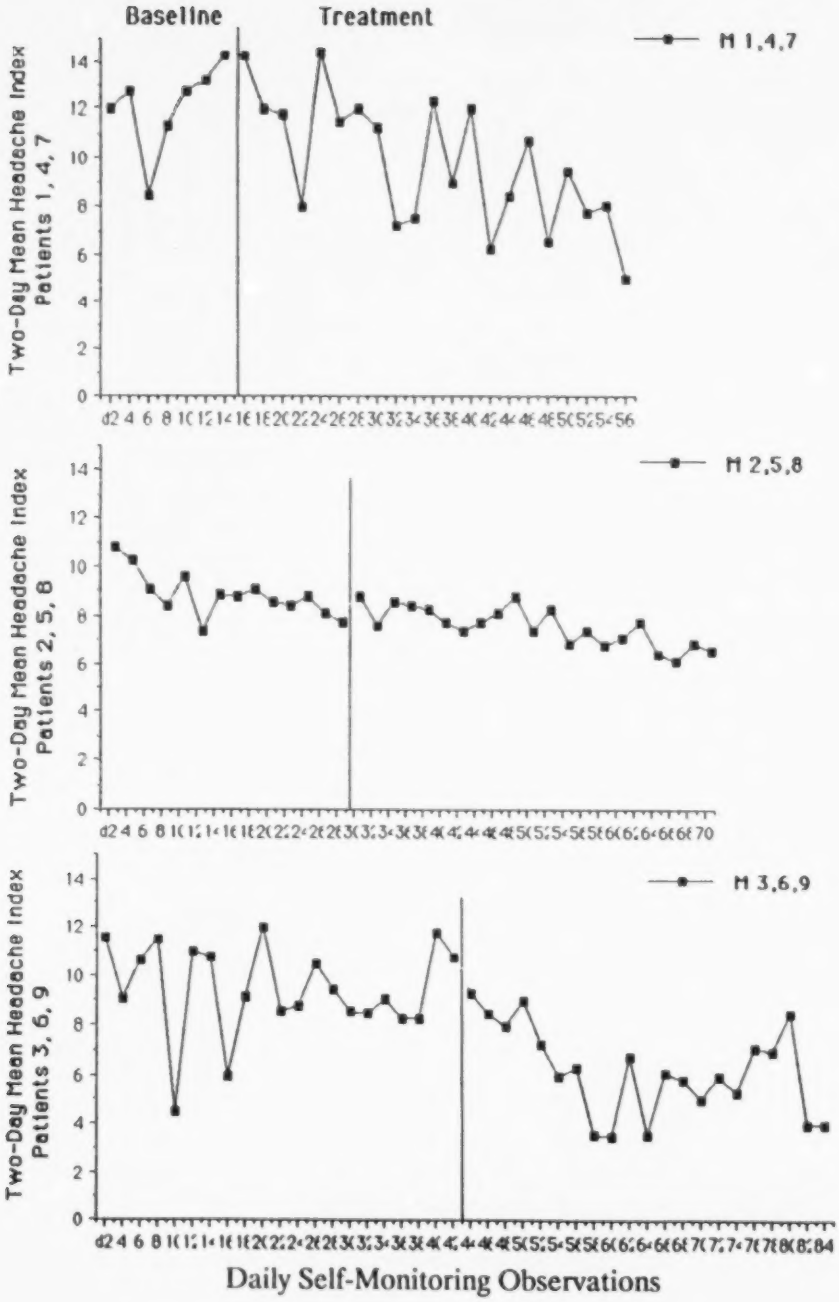

Figure 2

Pain Behaviors

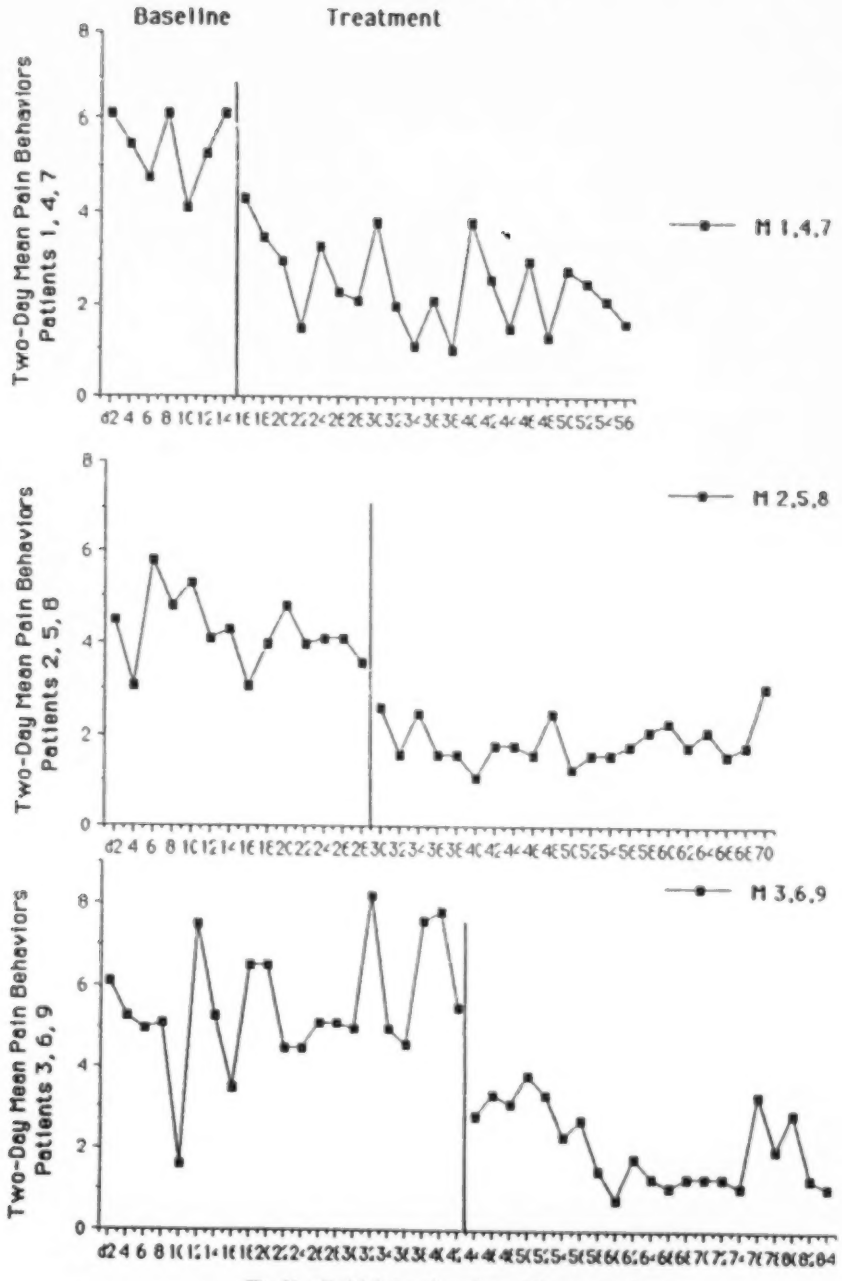

Figure 3

Dysphoric Mood States